

# Eric Jullo

Born March 25, 1979 in Saint-Brieuc, France  
French – Married – 2 children

## Work Address

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## Current Position

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NASA Postdoc at JPL, Relativistic Astrophysics, Group 3267 --- *Topics*: Weak and Strong Lensing, large scale structures, Dark matter & Dark Energy --- *Supervisor*: Jason D. Rhodes

## Education

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Nov. 2008 PhD in “Radiation, Plasmas and Astrophysics”, Université de Provence, Marseille --- *Title* : Mass distribution and Cosmological constraints with Strong Lensing in Galaxy Clusters --- *PhD Supervisors*: Jean-Paul Kneib, Alain Smette (ESO)  
Jul. 2005 Master degree in “Radiation, Plasmas and Astrophysics”, Université de Provence, Marseille  
Sep. 2002 Graduate in Computer Sciences Engineering, INSA Lyon  
Jul. 2002 Master degree in “Multimedia documents, Images and Information Communicating Systems”, INSA Lyon  
1997-1999 Eurinsa European section (2/3 foreigners, 1/3 French people), INSA Lyon

## Work experience

### November 2005 – January 2008

First two years of PhD at the European South Observatory in Santiago, Chile. I went three times at Paranal for observations and Instrumental works with VIMOS --- *Supervisor*: Alain Smette

### March 2005 – July 2005

Master thesis at the *Laboratoire d'astrophysique de Marseille* --- *Title*: 3D Spectroscopy analysis of a sample of lensing clusters of galaxies using the VIMOS instrument in IFU mode --- *Activity*: Images and spectra analysis, cluster mass profile modeling --- *Supervisor*: Jean-Paul Kneib

### September 2002 – April 2004

IT Manager at the French Embassies of Chile, Peru, Bolivia and Ecuador.

### November 2001 – September 2002

Master thesis at the Center of Innovation in Telecommunication and Integration of Services (CITI) in INSA Lyon --- *Title*: Radio coverage prediction in indoor WLAN --- *Activity*: JAVA programming of a radio propagation simulator using the finite elements technique --- Best paper award at the 12<sup>th</sup> International Conference on Antennas and Propagation (ICAP), 2003, London, UK. --- *Supervisor*: Jean-Marie Gorce

### May – August 2001

Internship at the Computer Vision Laboratory in ETH Zurich --- *Title*: Movements detection in extremely noisy endoscopes video sequences --- *Activity*: C++ programming, image processing --- *Supervisor*: Gábor Székely

### June – August 2000

Internship at the Fakultät für Physik und Geowissenschaften of the Leipzig University --- *Title*: European Project on Advanced Signal Processing for Medical Magnetic Resonance Imaging and Spectroscopy --- *Activity*: Signal processing and JAVA GUI programming --- *Supervisors*: Danielle Graveron, D. Michel, C. Mangeat

## Languages

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Spanish, English fluent, German, Russian, basics

## Technical skills

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Languages : C/C++, JAVA, IDL, Perl, Bash, FORTRAN, Tcl/Tk, Python, SQL, HTML, Javascript.

Software engineering: UML, CVS versioning, Software development quality methods.

Data reduction : VIMOS IFU, FORS, UVES spectra.

Astronomical tools : Lenstool, DS9 (good expertise), GIM2D, SExtractor, skycat, VLT proposal tools

## Miscellaneous

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Medium and high-altitude mountaineering , climbing, football.

Driving license.

## Publications

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1. Covone G., Kneib J.-P., Soucail G., Richard J., **Jullo E.**, Ebeling H., 2006, *VIMOS-IFU survey of  $z \sim 0.2$  massive galaxy clusters. I. Observations of the strong lensing cluster Abell 2667*, A&A, 456, 409
2. Grin D., Covone G., Kneib J.-P., Kamionkowski M., Blain A., **Jullo E.**, 2007, *Telescope search for decaying relic axions*, PhRvD, 75, 105018
3. Richard J., Kneib J.-P., **Jullo E.**, Covone G., Limousin M., Ellis R., Stark D., Bundy K., Czoske O., Ebeling H., Soucail G., 2007, *A Statistical Study of Multiply Imaged Systems in the Lensing Cluster Abell 68*, ApJ, 662, 78
4. Limousin M., Richard J., **Jullo E.**, Kneib J.-P., Fort B., Soucail G., Elíasdóttir Á., Natarajan P., Ellis R.S., Smail I., Czoske O., Smith G.P., Hudelot P., Bardeau S., Ebeling H., Egami E., Knudsen K.K., 2007, *Combining Strong and Weak Gravitational Lensing in Abell 1689*, ApJ, 648, 643
5. **Jullo E.**, Kneib J.-P., Limousin M., Elíasdóttir Á., Marshall P., Verdugo T., 2007, *A Bayesian approach to strong lensing modelling of galaxy clusters*, NJPh, 9, 447
6. Covone G., Paolillo M., Napolitano N.R., Capaccioli M., Longo G., Khovanskaya O., Kneib J.P., Grogin N., **Jullo E.**, Sazhin M., Schreier E., 2007, *Gauging the dark matter fraction in a  $L^* S0$  galaxy at  $z=0.466$  through gravitational lensing*, ApJ, 691, 531
7. Tu H., Limousin M., Fort B., Shu C.G., Sygnet J.F., **Jullo E.**, Kneib J.P., Richard J., *Probing the Slope of Cluster Mass Profile with Gravitational Rings: Application to Abell 1689*, MNRAS, 386, 1169
8. Limousin M., Richard J., Kneib J.-P., Brink H., Pello R., **Jullo E.**, Tu H., Sommer-Larsen J., Egami E., Michalowski M. J., Cabanac R., Stark D. P., 2008, *Strong Lensing in Abell 1703: Constraints on the Slope of the Inner Dark Matter Distribution*, A&A, 489, 23
9. Limousin M., Cabanac R., Gavazzi R., Kneib J.-P., Motta V., Richard J., Thanjavur K., Foex G., Pello R., Crampton D., Faure C., Fort B., **Jullo E.**, Marshall P., Mellier Y., More A., Soucail G., Suyu S., Swinbank M., Sygnet J.-F., Tu H., Valls-Gabaud D., Verdugo T., Willis J., 2008, *A New Window of Exploration in the Mass Spectrum: Strong Lensing by Galaxy Groups in the SL2S*, submitted to A&A, arXiv:0812.1033
10. Tu H., Gavazzi R., Limousin M., Cabanac R., Marshall P. J., Fort B., Treu T., Péllé R., **Jullo E.**, Kneib J.-P., Sygnet J.-F., 2009, *The mass profile of early-type galaxies in overdense environments: the case of the double source plane gravitational lens SL2SJ02176-0513*, submitted to A&A, arXiv:0902.4804
11. Richard J., Pei L., Limousin M., **Jullo E.**, Kneib J. P., 2009, *Keck spectroscopic survey of strongly lensed galaxies in Abell 1703: further evidence of a relaxed, unimodal cluster*, A&A, 498, 37
12. Ebeling H., Ma C. J., Kneib J.-P., **Jullo E.**, Courtney N. J. D., Barrett E., Edge A. C., Le Borgne, J.-F., 2009, *A spectacular giant arc in the massive cluster lens MACSJ1206.2-0847*, MNRAS, 395, 1213
13. **Jullo E.** & Kneib J.-P., *Semi-parametric cluster lens mass mapping. I Revisiting Abell 1689 Strong Lensing model*, MNRAS, 395, 1319
14. **Jullo E.** et al., *Dark energy constrain with strong lensing in galaxy clusters*, in prep.

## Conferences proceedings

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1. Covone G., Kneib J.-P., Soucail G., Jullo E., Richard J., *First results from the VIMOS-IFU survey of gravitationally lensing clusters at  $z \sim 0.2$* , Proceedings in "Sciences Perspectives for 3D Spectroscopy. ESO Astrophysics Symposia", Oct. 10-14, 2005, arXiv:astro-ph/0601387
2. Jullo E., Kneib J.-P., Smette A., Limousin M., Richard J., *Determination of the cosmological parameters through strong lensing*, Poster in "Application of Gravitational Lensing: Unique Insights into Galaxy Formation and Evolution", Conf. Oct 3-6, 2006
3. Jullo E., Christensen L., Smette A., Bagnulo S., Izzo C., Marconi G., *Origin and Processing of Fringing in the VIMOS IFU*, Poster in "The 2007 ESO Instrument Calibration Workshop", Jan. 23-26, 2007
4. Jullo E., Kneib J.-P., Limousin M., Elíasdóttir Á., Marshall P., Verdugo T., *Bayesian Strong Lensing modelling of galaxy clusters*, Poster in "Tracing Cosmic Evolution with Clusters of Galaxies: Six Years Later" Conf., Jun. 25-29, 2007
5. Jullo E., Kneib J.-P., Limousin M., Elíasdóttir Á., Marshall P., Verdugo T., *Bayesian Strong Lensing modelling of galaxy clusters*, Poster in "From giant arcs to CMB lensing: 20 years of gravitational distortion" Conf., Jul. 2-6, 2007

6. Jullo E. & Kneib J.-P., *Cosmological Parameters Using Strong Lensing*, talk in “43<sup>rd</sup> Rencontres de Moriond” Conf. Mar. 15-22, 2008

## Astronomy Schools

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Latin American Astronomy Summer School, Santiago, Chile, 8-10 December 2005